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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/628,565	07/29/2003	Karsten Schulz	13909-026001 / 2002P00222	4843
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EXAMINER KARDOS, NEIL R				
ART UNIT 3623		PAPER NUMBER		
NOTIFICATION DATE 11/20/2008		DELIVERY MODE ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATDOCTC@fr.com

### Office Action Summary

**Application No.**

10/628,565

**Applicant(s)**

SCHULZ ET AL.

**Examiner**

Neil R. Kardos

**Art Unit**

3623

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 September 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date: \_\_\_\_\_

**DETAILED ACTION**

1. This is a **NON-FINAL** Office action on the merits in response to communications filed September 8, 2008. Currently, claims 1-37 are pending.

***Continued Examination Under 37 CFR 1.114***

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 8, 2008 has been entered.

***Response to Amendment***

3. Applicant's amendments to claims 1, 16, and 31 have been acknowledged. New prior art has been applied to the amended claims below.

***Response to Arguments***

4. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

**5. Claims 1-37 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.**

Claim 1: Claim 1 is directed toward a “workflow model.” A model is not a process, machine, manufacture, or composition of matter; thus, claim 1 is directed to non-statutory subject matter.

Claim 16: Claim 16 is directed toward the statutory category of a process. In order for a claimed process to be patentable subject matter under 35 U.S.C. § 101, it must either: (1) be tied to another statutory class (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or materials) to a different state or thing. *See Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972). If neither of these requirements is met by the claim, the method/process is not patentable subject matter under § 101. Thus, to qualify as a statutory process under § 101, the claim should positively recite the other statutory class to which it is tied (e.g. by identifying the apparatus that accomplishes the method steps), or positively recite the subject matter that is being transformed (e.g. by identifying the material that is being changed to a different state).

Here, the claimed invention does not transform underlying subject matter to a different state or thing because it merely joins two workflows. Furthermore, the claimed process is not tied to another statutory category, such as a particular apparatus. Without a positive recitation of the statutory class to which the claimed process is tied (e.g. a computer), the claimed subject matter is unpatentable under § 101.

Claim 31: Claim 31 recites a system comprising modelers and an engine. These components as recited do not necessarily constitute a physical structure, such as computer hardware. Rather, these components could be software. Software per se (i.e. not tangibly embodied on a computer readable medium) is considered printed matter which is not statutory under 35 USC 101.

Claims 2-15, 17-30, and 32-37: Dependent claims 2-15, 17-30, and 32-37 are rejected for failing to remedy the deficiencies of the claims from which they depend.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**6. Claims 1-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schulz, “Architecting Cross-Organizational B2B Interactions” in view of Basu, “A Formal Approach to Workflow Analysis.”**

Claim 1: Schulz discloses:

- a first workflow associated with only a first party (see page 95: section 4.2, disclosing separating workflows into shared/public tiers and private tiers; page 96: figure 1; page 97: figure 2);

- a first workflow view representing an abstracted first workflow different from and based on the first workflow (see pages 95-96: section 4.2.2, disclosing business process services, which are an abstraction of the actual processes offered by an organization; page 96: figure 1)
- a second workflow associated with only a second party (see page 95; section 4.2; figures 1-2);
- a second workflow view representing an abstracted second workflow different from and based on the second workflow (see pages 95-96: section 4.2.2; figure 1);
- a coalition workflow view referencing the first workflow view and the second workflow view to provide a collaborative workflow, the collaborative workflow specifying tasks that the first party and the second party are required to perform (see figures 1-2).

Schulz does not explicitly disclose the first and second workflow views expressing virtual tasks of the first and second workflows as first and second vertices within a first and second matrix. Basu discloses expressing tasks of workflows as vertices within a matrix (see tables on pages 23-24, 29, and 31). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the matrices of Basu to express the tasks of Schulz. One of ordinary skill in the art would have been motivated to do so for the benefit of efficiencies gained by being able to easily determine the relation between tasks.

Claim 2: Schulz discloses wherein the first workflow and the second workflow are private to the first and second parties, respectively (see pages 95-96: sections 4.2-4.2.2).

Claims 3-4: Schulz discloses virtual tasks in workflow views, wherein the virtual tasks correspond to a plurality of actual tasks (see page 95: section 4.1, disclosing compound tasks that represent several tasks that are grouped together).

Claim 5: Schulz discloses a dependencies between virtual task and the plurality of actual tasks, wherein the dependencies are selected to maintain an order of operation of the actual tasks (see page 95: section 4.1 and 4.2.1, disclosing a shared business process to maintain dependencies between elements of business processes from different organizations).

Claims 6-7: Schulz discloses wherein virtual executions correspond to actual executions and actual transitions are reflected in virtual transitions (see pages 97-98, disclosing a B2B process in action, including customer actions triggering business processes; figure 2).

Claim 8: Schulz discloses wherein a message from a party concerning a virtual task is forwarded to an active task (see page 96: section 4.3, disclosing business events that exchange information between private tasks and shared tasks).

Claim 9: Schulz discloses virtual tasks in workflow views, wherein the virtual tasks correspond to a plurality of actual tasks (see page 95: section 4.1, disclosing compound tasks that represent several tasks that are grouped together).

Claim 10: Schulz discloses wherein the tasks within the coalition workflow comprise virtual tasks associated with workflow views (see figures 1-2).

Claim 11-12: Schulz discloses a synchronizing task operable to preserve an order of execution of the virtual tasks (see page 95: section 4.1 and 4.2.1, disclosing a shared business process to maintain dependencies between elements of business processes from different organizations).

Claim 13: Schulz discloses wherein the collaborative workflow is implemented by communications between the first party and the second party regarding the first workflow view and the second workflow view (see page 96: section 4.3, disclosing business events that exchange information between private tasks and shared tasks).

Claim 14: Schulz discloses wherein the collaborative workflow is implemented by a third-party mediator (see page 95: section 4.2.1: ¶ 2; page 99: section 5.1).

Claim 15: Schulz discloses a third workflow view corresponding to a second abstraction of the first workflow and constructed for forming a second coalition workflow view referencing the third workflow view and a third workflow associated with a third party, to thereby provide a second collaborative workflow associated with the first and the third party (see page 95: section 4.2; pages 95-96: section 4.2.2; figures 1-2).



Claims 16-30: Claims 16-30 are substantially similar to claims 1-15 and are rejected under similar rationale.

Claim 31: Schulz discloses:

- a first workflow modeler operable to model a first workflow associated with only a first party (see figure 3, "Business Process Mapper" and "Service Modelling Tool"; section 5);
- a first view modeler operable to model a first virtual workflow as an abstracted first workflow different from and based on the first workflow (see figure 3, "Business Process Mapper" and "Service Modelling Tool"; section 5);
- a workflow engine operable to execute the first workflow and to virtually execute the first virtual workflow in conjunction with a second workflow associated with only a second party (see figure 3, "Workflow Engine"; section 5).

Schulz does not explicitly disclose expressing virtual tasks of the first workflow as first vertices within a first matrix. Basu discloses expressing tasks of workflows as vertices within a matrix (see tables on pages 23-24, 29, and 31). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the matrices of Basu to express the tasks of Schulz. One of ordinary skill in the art would have been motivated to do so for the benefit of efficiencies gained by being able to easily determine the relation between tasks.

Claim 32: Schulz discloses wherein the workflow engine is operable to execute the first virtual workflow in conjunction with a second virtual workflow, wherein the second virtual workflow is an abstraction of the second workflow (see figure 3, "Workflow Engine").

Claim 33: Schulz discloses wherein the first virtual workflow comprises a first virtual task associated with a first task and a second task of the first workflow (see page 95: section 4.1, disclosing compound tasks that represent several tasks that are grouped together; figure 3), and further wherein the workflow engine is operable to associate a virtual execution state of the first virtual task with a first execution state of the first task and a second execution state of the second task (see page 95: section 4.1 and 4.2.1, disclosing a shared business process to maintain dependencies between elements of business processes from different organizations; figure 3)

Claim 34: Schulz discloses a monitor operable to track the virtual execution state, the first execution state, and the second execution state (see figure 3; page 99: section 5.2, disclosing tracking).

Claim 35: Schulz discloses a database for storing the workflows (see figure 3).

Claim 36: Schulz discloses a gateway for routing messages (see section 5.2).

Claim 37: Schulz discloses a mediator comprising:

- a security manager to receive messages regarding the first virtual workflow for decryption (see section 5.2);
- a database operable to store workflows (see figure 3 and section 5.2);
- a monitor operable to track execution states (see figure 3 and section 5.2).

### *Conclusion*

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Klingemann, Justus, et al. "Deriving Service Models in Cross-Organizational Workflows." Proceedings of the Ninth International Workshop on Research Issues on Data Engineering: Information Technology for Virtual Enterprises (1999). p 100
- Schulz, Karsten and Maria Orlowska. "Architectural Issues for Cross-organisational B2B Interactions." International Conference on Distributed Computing Systems Workshop (Apr 2001). pp 79-87
- Gal, Avigdor and Denilo Montesi. "Inter-Enterprise Workflow Management Systems." Proceedings of the 10<sup>th</sup> International Workshop on Database & Expert Systems Applications (1999). p 623
- Grefen, Paul, et al. "CrossFlow: Cross-Organizational Workflow Management in Dynamic Virtual Enterprises." IEEE Data Engineering Bulletin (2001).
- Gronemann, Britta, et al. "Supporting Cross-Organizational Engineering Processes by Distributed Collaborative Workflow Management – The

MOKASSIN Approach.” International Proceedings of the 2<sup>nd</sup> Symposium on Concurrent Multidisciplinary Engineering (1999).

- Kafeza, Eleanna, et al. “View-Based Contracts in an E-Service Cross-Organizational Workflow Environment.” Proceedings of the Second International Workshop on Technologies for E-Services (2001). pp 74-88
- Kang, Myong H., et al. “Access Control Mechanisms for Inter-organizational Workflow.” Proceedings of the Sixth ACM Symposium on Access Control Models and Technologies (2001). pp 66-74
- Meng, Jie, et al. “Achieving Dynamic Inter-Organizational Workflow Management by Integrating Business Processes, Events and Rules.” Proceedings of the 35<sup>th</sup> Annual Hawaii International Conference on System Sciences (Jan 2002). p 10
- van der Aalst, Wil M. P. and Mathias Weske. “The P2P Approach to Interorganizational Workflows.” Proceedings of the 13<sup>th</sup> International Conference on Advanced Information Systems Engineering (2001). pp 140-156
- van der Aalst, Wil M. P. “Inheritance of Interorganizational Workflows to Enable Business-to-Business E-Commerce.” Electronic Commerce Research: Volume 2, Issue 3 (July 2002). pp 195-231
- van der Aalst, Wil M. P. “Interorganizational Workflows: An Approach Based on Message Sequence Charts and Petri Nets.” Systems Analysis – Modelling & Simulation: Volume 34, Issue 3 (1999). pp 335-367

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Neil R. Kardos whose telephone number is (571) 270-3443. The examiner can normally be reached on Monday through Friday from 9 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Beth Boswell can be reached on (571) 272-6737. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Neil R. Kardos  
Examiner  
Art Unit 3623

NRK  
11/10/08  
/Jonathan G. Sterrett/  
Primary Examiner, Art Unit 3623